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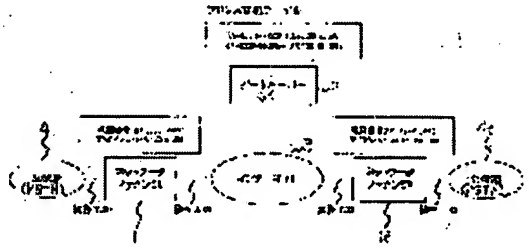
(54) NETWORK FACSIMILE EQUIPMENT

(57)Abstract:

PROBLEM TO BE SOLVED: To provide network facsimile equipment, with which an IP address can be automatically registered simultaneously with the registration of the telephone number of a destination and labor for inputting can be saved.

SOLUTION: When the telephone number of the destination to register is inputted in an operating part 11 and the collation of whether the IP address is present on the address translation table of a GK 2 or not is selected, while utilizing a RAS message specified by the ITU-T recommend H2550.0 from a LAN communication control part 13, a control part 18 accesses the GK 2 and acquires the IP address stored on the address translation table corresponding to the relevant telephone number. After the IP address is acquired, the IP address is added as destination registration and registered in a destination register part 12 and the registration of the IP address is completed.



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* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to control with the gatekeeper connected to the same network as network facsimile apparatus.
[0002]
[Description of the Prior Art] Since drawing information is referred to as that communication link cost does not require the direction of the real-time mold Internet drawing information communication link which communicates in real time through the Internet in recent years compared with the public network drawing information communication link which communicates drawing information through a public line network, the network facsimile apparatus which used the Internet as a communication line of facsimile apparatus is used. Such network facsimile apparatus is equipped with the function to perform the exchange of other facsimile apparatus and drawing information through a public line network, and the function to exchange drawing information through the Internet. When exchanging drawing information network facsimile apparatus minded the Internet, facsimile communication through the Internet is performed by accessing the gatekeeper (henceforth GK) who stores the telephone number and IP (Internet Protocol) address of the destination, and acquiring the IP address applicable to the telephone number from this GK.
[0003] By the way, JP,2000-184118,A is equipped with two or more means of communications, and the network facsimile apparatus and the control approach of choosing any one of two or more means of communications to the specified destination, and transmitting the specified drawing information to it are indicated. moreover -- JP,11-331474,A -- the call origination point -- the case of only PSTN, PSTN, and an IP address -- the network facsimile apparatus into which the communicate mode is changed according to the case where it is both registered is indicated.
[0004]
[Problem(s) to be Solved by the Invention] As mentioned above, since the telephone number of the destination and an IP address are not injured with relation about the phase hand of facsimile communication and the IP address of the destination which corresponds from the telephone number is unacquirable, it is necessary to acquire the IP address which asks GK and corresponds to the telephone number, and to communicate with a phase hand's facsimile apparatus in the conventional network facsimile apparatus. Thereby, in the facsimile apparatus into which only the telephone number is registered, unless a user registers an IP address, after asking GK each time, it will be necessary to communicate with a phase hand's facsimile apparatus. Moreover, when there is the address of the telephone number of the destination and two IP addresses, it will be necessary to both register the network facsimile apparatus which can register two or more addresses about the one destination, and it will become troublesome time and effort.
[0005] On the other hand, when GK cannot make functional offers (response to an inquiry of an IP address etc.) by the reasons of failure etc., unless the user has inputted the IP address in the network facsimile apparatus with which only the telephone number of the destination is registered, it will be said

that facsimile communication through an IP connection, i.e., the Internet, cannot be performed. Moreover, since it cannot relate and cannot register by carrying out the telephone number and the IP address of the destination in the conventional facsimile apparatus, even if it acquires an IP address from the telephone number by GK, the IP address made to correspond to the telephone number cannot be registered into a self-opportunity only by using as a communicative phase hand. Moreover, in the conventional network facsimile apparatus, since communicative specification is G3 when it transmits by real-time mold Internet drawing information communication link, only the telephone number of the destination is recorded on the data of communication management, and an IP address is not recorded. From the above situations, when GK performs correlation of the telephone number of the destination and an IP address, the network facsimile apparatus which the destination telephone number and the IP address about one phase hand (destination) can be made to be able to respond, and can associate, carry out and register them has been called for.

[0006] Then, the 1st purpose of this invention is offering the network facsimile apparatus which can register an IP address automatically and can save the time and effort of an input by registering only the telephone number of the destination by using GK's information. The 2nd purpose of this invention is offering the network facsimile apparatus which can register an IP address with an one-touch dial, and can save the time and effort at the time of being an input by using the telephone number of the destination, and the add function of an IP address for an one-touch dial means. The 3rd purpose of this invention is offering the network facsimile apparatus which can update the information on an IP address automatically, also when the IP address corresponding to the already registered telephone number is changed as the destination by asking and making it GK for every predetermined time.

[0007] The 4th purpose of this invention is offering the network facsimile apparatus which can reduce communication link cost by changing as a public network drawing information communication link is used, only when it is not necessary to specify means of communications and a real-time mold Internet drawing information communication link cannot be performed like whether it carries out by public network drawing information communication link like before, or a real-time mold Internet drawing information communication link is performed. The 5th purpose of this invention is offering the network facsimile apparatus which can check in what kind of path it having communicated by recording an IP address on communication management.

[0008]

[Means for Solving the Problem] It connects with the Internet and a public line network in invention according to claim 1. Two or more IP (Internet Protocol) addresses corresponding to the telephone number which is the destination of said Internet connectivity or said facsimile apparatus of the others by which public line network connection is made, and facsimile apparatus besides the above, and the telephone number concerned are made into IP address information. In the network facsimile apparatus in which the gatekeeper who stores and data transmission and reception are possible The input means to which the input of the telephone number is urged as destination registration of facsimile apparatus besides the above, or the data transmitting destination, A registration means to register the telephone number concerned for every facsimile apparatus when the telephone number is inputted as destination registration of facsimile besides the above in said input means, A check means to check whether the IP address relevant to the telephone number concerned is stored to said gatekeeper in case said registration means registers the telephone number for every facsimile apparatus, An IP address acquisition means to acquire the IP address information corresponding to the telephone number concerned from said gatekeeper when the IP address relevant to the telephone number concerned in said check means was stored by said gatekeeper and it checks, A preparation and said registration means attain said 1st purpose by relating and registering for every facsimile apparatus, by making into the telephone number concerned IP address information which said IP address acquisition means acquired.

[0009] In invention according to claim 2, said registration means attains said 2nd purpose in invention according to claim 1 by being the one-touch dial which can specify the destination by one key stroke. In invention according to claim 3, it sets to invention according to claim 1 or 2. After [when said IP address acquisition means acquires IP address information] predetermined time progress from from, A

modification check means to check to said gatekeeper whether there is any modification in the IP address information for every facsimile apparatus registered by said registration means, When the IP address information on predetermined in said modification check means had modification and it checks, said 3rd purpose is attained by having had further an updating means to update the IP address information checked when there was the modification concerned registered into said registration means.
[0010] In invention of the publication among [1 / any] claim 1, claim 2, and claim 3 in invention according to claim 4 The Internet means of communications which transmits data to real time through said Internet to facsimile apparatus besides the above, The public line network means of communications which communicates data through said public line network to facsimile apparatus besides the above, A communication link decision means to determine which shall perform data transmission to facsimile apparatus besides the above between said Internet means of communications or said public line network means of communications, A telephone number collating means to collate and check whether the IP address information related with the telephone number is registered into said registration means when the telephone number is inputted as the data transmitting destination in said input means, When it prepared for the pan and the IP address by which said communication link decision means was related with the telephone number as which said telephone number collating means was inputted by said input means collated and checks registering with said registration means, Said 4th purpose is attained by opting for the data transmission by said Internet means of communications. It has further a communication link record means to record as communication management by which means of communications of said Internet means of communications or said public line network means of communications data transmission was carried out on facsimile apparatus. invention according to claim 5 -- invention according to claim 4 -- setting -- said -- others -- When the facsimile apparatus said whose communication link record means is a transmission place when data transmission by said Internet means of communications is performed is G3 facsimile equipment, Said 5th purpose is attained by recording both the telephone number of the facsimile apparatus concerned, and an IP address as communication management, and recording an IP address as communication link record, when the facsimile apparatus which is a transmission place is the facsimile apparatus which has an IP address.
[0011]
[Embodiment of the Invention] Hereafter, the gestalt of suitable operation of this invention is explained to a detail with reference to drawing 1 thru/or drawing 7 . Drawing 1 is the schematic diagram having shown the connection condition of the network facsimile apparatus concerning the gestalt of this operation. As shown in drawing 1 , the network facsimile apparatus 1 and 1a are connected with the Internet 3 by the communication link criterion of ITU-T recommendation T.38, and acquisition of the IP address about the telephone number of the destination etc. is exchanged with GK2 who has an address translation table through this Internet 3. Moreover, the network facsimile apparatus 1 and 1a are connected with public networks (PSTN) 4 and 4a by the communication link criterion of ITU-T recommendation T.30, respectively. If the network facsimile apparatus 1 and 1a transmit the acquisition demand of the IP address corresponding to the telephone number to GK2, GK2 extracts the IP address of the telephone number which corresponds from an address translation table, will relate the IP address concerned with the telephone number, and will transmit it to the network facsimile apparatus 1 and 1a which have transmitted the acquisition demand.
[0012] Drawing 2 is the block diagram having shown the outline configuration of the network facsimile apparatus concerning the gestalt of this operation. Here, although the network facsimile apparatus 1 is explained as an example, network facsimile apparatus 1a is also considered as the same configuration. As shown in drawing 2 , the network facsimile apparatus 1 is equipped with a control unit 11, the destination registration section 12, the LAN (Local Area Network) communications control section 13, the communication management section 14, the manuscript storage section 15, the reading section 16, a display 17, a control section 18, and G3FAX communications control section 19. If the telephone number registered into the destination registration section 12 in a control unit 11 is inputted and decision is pushed, from GK's2 address translation table connected to the same network using the RAS (Registration Admittion and Status Protcol) message (ITU-T recommendation 255.0 convention) from

the LAN communications control section 13, a control section 18 will acquire the IP address corresponding to the telephone number inputted as a candidate for registration, and will register it into the destination registration section 12. A control section 18 registers the destination into the destination registration section 12 as registration of only the telephone number, when there is no telephone number inputted as a candidate for registration in GK's2 address translation table.

[0013] Drawing 3 is the flow chart which showed the procedure of having related and registering by carrying out the telephone number and an IP address. Registration initiation is chosen in a control unit 11 (step 31), and if the telephone number of the destination used as the candidate for registration is inputted (step 32), selection of whether to collate whether a control section 18 has an IP address corresponding to the corresponding telephone number in GK's2 address translation table will be urged (step 33). Here, when it did not collate whether an IP address would be shown in GK's2 address translation table and chosen (step 33; N), it registers with the destination registration section 12 as registration of only the telephone number as it is, and processing is ended. When it collated whether an IP address would be shown in GK's2 address translation table and chosen (step 33;Y), using the RAS message specified by ITU-T recommendation H255.0 from the LAN communications control section 13, a control section 18 accesses GK2 and acquires the IP address corresponding to the telephone number concerned stored in the address translation table.

[0014] After acquiring the IP address which related with the telephone number by the RAS message, and was carried out, a control section 18 adds an IP address as destination registration, registers it into the destination registration section 12 (step 34), and ends registration of an IP address (step 35). As mentioned above, by using GK's2 information (address translation table), by inputting the telephone number, an IP address can also be associated as destination registration, it can register automatically, and the time and effort of an input can be saved by the network facsimile apparatus side with the network facsimile apparatus of the gestalt of this operation. Moreover, in the network facsimile apparatus of the gestalt of this operation, since GK is asked beforehand and the IP address corresponding to the telephone number is registered into a self-opportunity, it is not necessary to ask GK and a communication procedure can be skipped each time. Furthermore, since the network facsimile apparatus of the gestalt of this operation registers the IP address into the self-opportunity by using GK's2 information (address translation table), even when GK breaks down or it becomes access impossible, it cannot be influenced of GK but can perform a communication link by the IP connection.

[0015] Drawing 4 is drawing having shown an example of the one-touch dial at the time of relating and registering by carrying out the telephone number and an IP address as destination registration. In the actuation screen which a control unit 11 does not illustrate, the one-touch dials A and B of drawing 4 show the case where only the telephone number is registered as the destination with the one-touch dial B in the case where the telephone number and an IP address are registered as the destination, with the one-touch dial A, respectively. The destination registration section 12 of drawing 2 can specify the registration information now by one key stroke according to the actuation from the one-touch dials A and B of a control unit 11. Thus, in the network facsimile apparatus of the gestalt of this operation, by using the telephone number of the destination, and the add function of an IP address for an one-touch dial means, an IP address can be registered with an one-touch dial, and the time and effort at the time of being an input can be saved.

[0016] Drawing 5 is the flow chart which showed the procedure which updates the IP address registered. If a control section 18 judges that the predetermined time interval passed (step 51;Y), it will check whether the telephone number and an IP address are set as the predetermined destination registered into the destination registration section 12 (step 52). Here, when the IP address which was associated and was made into the telephone number and it is registered into a certain destination (step 52;Y), it checks whether a control section 18 has a the same IP address in whether there is any modification in the IP address corresponding to the telephone number concerned in the address translation table of GK2 connected to the same network using the RAS message from the LAN communications control section 3 (step 53). When the IP address corresponding to the telephone number concerned in GK's2 address translation table differs from the IP address corresponding to the telephone number concerned registered

into the destination registration section 2 (step 53; N), a control section 18 rewrites the IP address registered into the destination registration section 12 (step 54), and shifts to check processing of the IP address of another telephone number registered as the destination in the destination registration section 12 (step 55). If it investigates about the IP address corresponding to the telephone number of all the destinations registered into the destination registration 12 (step 55;Y), a control section 18 will end an update process of an IP address.

[0017] In addition, a user's predetermined time interval which performs check processing of the IP address corresponding to the telephone number of the destination where the control section 18 is registered into the destination registration section 2 to GK2 is good also as what can be set as arbitration from a control unit 11, and he may set it as the control section 18 of network facsimile apparatus as a default beforehand. As mentioned above, in the network facsimile apparatus of the gestalt of this operation, since an inquiry of an IP address is performed to GK for every predetermined time, also when the IP address corresponding to the already registered telephone number is changed as the destination, the information on an IP address can be updated automatically.

[0018] Drawing 6 is the flow chart which showed the selection procedure of the drawing information means of communications at the time of performing facsimile communication. A manuscript is set, and when transmitting drawing information on the manuscript read in the reading section 16 (step 61), the destination which is a transmission place of drawing information is inputted from a control unit 11 (step 62). It collates whether a control section 18 is in agreement with the telephone number with which the inputted destination is already registered into the destination registration section 12 (step 63). When the destination of the telephone number inputted by the control section 18 is judged to already have registered with the destination registration section 12 (step 63;Y) and it is judged that the IP address which was associated and was further made into the telephone number of the destination concerned is registered (step 64;Y), the drawing information on a manuscript is transmitted to a phase hand using real-time mold Internet drawing information means of communications by the LAN communications control section 13 (step 65).

[0019] When it is judged that the IP address which was associated and was made into the telephone number of the destination concerned by the control section 18 is not registered on the other hand (step 64; N), the drawing information on a manuscript is transmitted to a phase hand using public network drawing information means of communications by G3FAX communications control section 19 (step 66). As mentioned above, in the network facsimile apparatus of the gestalt of this operation, since drawing information is transmitted by the public network drawing information communication link through a public network only when drawing information cannot be transmitted by real-time mold Internet drawing information communication link (i.e., only when the IP address which was associated and was made into the telephone number of the destination is not registered), communication link cost can be reduced.

[0020] Drawing 7 is the flow chart which showed the communication management procedure of facsimile communication. A control section 18 will check whether the facsimile apparatus of the partner who is a transmission place is G3 facsimile equipment, if drawing information is transmitted by the LAN communications control section 3 using a real-time mold Internet drawing information communication link (step 71) (step 72). When a transmission place is G3 facsimile equipment (step 72;Y), the telephone number and the IP address of the destination are registered into the communication management section 14, and processing is ended (step 73). On the other hand, when a transmission place is not G3 facsimile equipment (step 72; N) but the facsimile apparatus with which a transmission place has an IP address, the IP address concerned is added and registered into the communication management section 4 as an IP address relevant to the corresponding telephone number (step 74). As mentioned above, in the network facsimile apparatus of the gestalt of this operation, if drawing information is transmitted by real-time mold Internet drawing information communication link, since an IP address will be recorded on communication management, unlike the case where the telephone number is registered, either a real-time mold Internet drawing information communication link or the public network drawing information communication link through a public network can record a communication path correctly

for every facsimile apparatus with the conventional facsimile apparatus.
[0021]
[Effect of the Invention] In invention according to claim 1, since a registration means relates and registers for every facsimile apparatus by making into the telephone number concerned IP address information which the IP address acquisition means acquired, it can save the time and effort which inputs an IP address.
[0022] In invention according to claim 2, since a registration means is the one-touch dial which can specify the destination by one key stroke, when registering with an one-touch dial, it can save the time and effort which inputs an IP address.
[0023] After [when an IP address acquisition means acquires IP address information in invention according to claim 3] predetermined time progress from from, A modification check means to check to said gatekeeper whether there is any modification in the IP address information for every facsimile apparatus registered by the registration means, Since it had further an updating means to update the IP address information checked when there was the modification concerned registered into the registration means when the modification check means was subject to change to predetermined IP address information and it checked When the IP address corresponding to a certain telephone number is changed, the time and effort which changes an IP address can be saved.
[0024] Since a communication link decision means performs the drawing information communication link which minded a public network only when a real-time mold Internet drawing information communication link cannot be performed since it opted for the data transmission by the Internet means of communications at invention according to claim 4 when it is collated and checked that the IP address related with the telephone number as which the telephone number collating means was inputted by the input means is registered into a registration means, communication link cost can reduce.
[0025] When the facsimile apparatus whose communication link record means is a transmission place when data transmission by the Internet means of communications is performed is G3 facsimile equipment in invention according to claim 5, Since both the telephone number of the facsimile apparatus concerned and an IP address are recorded as communication management, and an IP address is recorded as communication link record when the facsimile apparatus which is a transmission place is the facsimile apparatus which has an IP address Unlike the case where the telephone number is registered, either a real-time mold Internet drawing information communication link or the drawing information communication link through a public network can record a communication path correctly with the conventional facsimile apparatus.

[Translation done.]